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IN THE CLAIMS:

1. (Canceled)

2. (Currently amended) An ~~The~~ ultrasonic imaging catheter apparatus ~~of claim 1~~ comprising:

a flexible elongate body adapted for insertion into a body lumen, the elongate body having distal and proximal ends;

an ultrasonic transducer disposed proximate said distal end of said elongate body, said ultrasonic transducer generating and detecting ultrasonic energy;

a reflective member proximate said ultrasonic transducer, said reflective member being adapted to reflect (a) ultrasonic energy generated by said ultrasonic transducer to a wall of said body lumen and (b) ultrasonic energy reflected by said wall back to said transducer; and

an actuator in mechanical communication with said reflective member, said actuator being adapted to change the angle of incidence of said ultrasonic energy relative to said reflective member,

wherein control signals for said ultrasonic transducer and for said actuator are transmitted via a common electrical conductor.

3. (Original) The ultrasonic imaging catheter apparatus of claim 2, wherein said ultrasonic transducer is provided with a high pass filter to block said actuator control signals.

4. (Original) The ultrasonic imaging catheter apparatus of claim 3, wherein the high pass filter comprises a capacitor.

5. (Original) The ultrasonic imaging catheter apparatus of claim 2, wherein said actuator is provided with a low pass filter to block said ultrasonic transducer control signals.

6. (Original) The ultrasonic imaging catheter apparatus of claim 5, wherein the low pass filter comprises an inductor.

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7. (Original) The ultrasonic imaging catheter apparatus of claim 2, wherein said common electrical conductor is a coaxial cable.

8. (Currently amended) An ~~The~~ ultrasonic imaging catheter apparatus ~~of claim 1~~ comprising:

a flexible elongate body adapted for insertion into a body lumen, the elongate body having distal and proximal ends;

an ultrasonic transducer disposed proximate said distal end of said elongate body, said ultrasonic transducer generating and detecting ultrasonic energy;

a reflective member proximate said ultrasonic transducer, said reflective member being adapted to reflect (a) ultrasonic energy generated by said ultrasonic transducer to a wall of said body lumen and (b) ultrasonic energy reflected by said wall back to said transducer; and

an actuator in mechanical communication with said reflective member, said actuator being adapted to change the angle of incidence of said ultrasonic energy relative to said reflective member,

wherein said actuator is an electroactive polymer actuator.

9. (Original) The ultrasonic imaging catheter apparatus of claim 8, wherein said reflective member is rotatable with respect to an axis of said body lumen

10. (Original) The ultrasonic imaging catheter apparatus of claim 9, wherein said ultrasonic transducer is rotatable with respect to said axis of said body lumen.

11. (Original) The ultrasonic imaging catheter apparatus of claim 9, further comprising a rotatable housing, wherein said reflective member and said electroactive polymer actuator are mounted within said housing.

12. (Original) The ultrasonic imaging catheter apparatus of claim 11, wherein the housing comprises a material that is substantially transparent to said ultrasonic energy.

13. (Original) The ultrasonic imaging catheter apparatus of claim 11, wherein said reflective member is provided with a mechanical hinge, wherein said mechanical hinge is secured to said

housing, and wherein said electroactive polymer actuator is disposed between said housing and said reflective member.

14. (Currently amended) The ultrasonic imaging catheter apparatus of claim ~~1~~ 8, wherein said reflective member is provided with a mechanical hinge.

15. (Original) The ultrasonic imaging catheter apparatus of claim 8, wherein said electroactive polymer actuator comprises an electroactive polymer region, a counter-electrode region, and an electrolyte-containing region disposed between said electroactive polymer region and said counter-electrode region.

16. (Original) The ultrasonic imaging catheter apparatus of claim 8, wherein said electroactive polymer actuator comprises an electroactive polymer selected from polyaniline, polysulfone, polyacetylene and polypyrrole.

17. (Original) The ultrasonic imaging catheter apparatus of claim 9, further comprising a motor and a drive shaft, said drive shaft translating torque from said motor to rotate said reflective member.

18. (Original) The ultrasonic imaging catheter apparatus of claim 8, comprising a plurality of electroactive polymer actuators, wherein said plurality of electroactive polymer actuators are adapted to change the angle of incidence of said ultrasonic energy relative to said reflective member.

19. (Original) A method of scanning the inner wall of a body lumen comprising:

providing the catheter apparatus of claim 9,

sweeping said ultrasonic energy in a predetermined pattern over the interior wall of the body lumen, wherein said sweeping is accomplished by rotating said reflective member and operating said electroactive polymer actuator to change the angle of incidence of said ultrasonic energy relative to said reflective member;

receiving ultrasonic energy reflected from the interior wall of the body lumen; and

producing an image from the reflected ultrasonic energy.

20. (Original) The method of claim 19, wherein the ultrasonic energy is directed at a forward angle of from about 10° to about 85° relative to the axis of the body lumen, whereby a forward conical sweep is performed.

21. (Original) The method of claim 19, further comprising axially advancing the reflective member within the body lumen.

22. (Original) The method of claim 19, wherein the reflective member is rotated under electronic control.